Wetland Report

To: Tony Wasilewski, Bureau of Land
IL Environmental Protection Agency
From: Allen Plocher, Scott Wiesbrook
Illinois Natural History Survey
Date: 22 February 2006
Re: Wetland Determination - Eagle Zinc Site
Hillsboro, IL
Montgomery County

Date Investigated: 31 January 2006

Project Description:

This project involves wetland assessment along an unnamed tributary to the Middle Fork of Shoal Creek in Montgomery Co., IL (legal location T 8 N, R 3 W, Sect. 6). This tributary receives drainage from an abandoned Zinc smelter (Eagle Zinc), which is currently under observation by the Illinois Environmental Protection Agency as a potential contaminant source. The following sources were examined while surveying the project area to determine wetland locations and boundaries: United States Geologic Survey topographic map and National Wetland Inventory map (Hillsboro, 7.5 minute quadrangle); *Soil Survey of Montgomery Co.*, aerial photographs; *National List of Plant Species That Occur in Wetlands*; *The 1987 Corps of Engineers Wetland Delineation Manual;* and on-site vegetation, soil, and hydrologic indicators. The project area consists of the floodplain of the tributary. Sites are located in relation to the edge of roadbed and banks of creek. The sites were mapped using Trimble Global Positioning System (GPS) and overlain on Digital Ortho Quad imagery by IEPA staff. Four sites were investigated, and all met the criteria of wetlands. None of the sites are considered to be isolated wetlands. Results of these determinations are summarized on the following pages and are described in more detail on the accompanying forms.

Site Summaries:

Site 1: This wet meadow/floodplain forest is located approximately 115 m south of Smith Rd. and immediately east of the tributary. Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. Hydrologic inputs are precipitation, sheetflow and creek overflow. Water leaves the site by evapotranspiration and sheetflow. The site is not coded by the NWI as wetland. The site occupies ------ ha. and functions as flood storage and wildlife habitat of moderate quality. Natural quality is fair.

Site 2: This floodplain forest is located approximately 12 m south of Smith Rd. and immediately east of the tributary. Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. Hydrologic inputs are precipitation, sheetflow and creek overflow. Water leaves the site by evapotranspiration and sheetflow. The site is not coded by the NWI as wetland. The site occupies ------ ha. and functions as flood storage and wildlife habitat of moderate quality. Natural quality is fair.

Site 3: This wet meadow is located from approximately 20 m north of Smith Rd. to the edge of Lake Hillsboro, and immediately west of the tributary. The site includes a small amount of cattail (*Typha*) marsh adjacent to Lake Hillsboro. This site appears to have become wetter in the past twenty years and subsequently changed from forest to wet meadow. Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. Hydrologic inputs are precipitation, sheetflow and creek overflow. Water leaves the site by evapotranspiration and sheetflow. Part of the site is coded as PFO1Ah (palustrine, forested, deciduous, temporarily flooded, diked/impounded) by the NWI, and part is not coded as wetland. The site occupies ------ ha. and functions as flood storage and wildlife habitat of moderate quality. Natural quality is fair to good.

Site 4: This floodplain forest is located approximately 130 m north of Smith Rd. and immediately east of the tributary. Hydrophytic vegetation, hydric soils and wetland hydrology are all present. Therefore this site is a wetland. Hydrologic inputs are precipitation, sheetflow and creek overflow. Water leaves the site by evapotranspiration and sheetflow. The site is not coded by the NWI as wetland. The site occupies ------ ha. and functions as flood storage and wildlife habitat of moderate quality. Natural quality is fair.

Watershed Data:

These sites are in the watershed for Shoal Creek, which has a drainage area of 728 km^2 (281 mi^2) near Walshville, IL. An unnamed tributary to the Middle Fork of Shoal Creek, within the project area, was about 1.5 m (5 ft) wide and clear, with a moderate flow rate on the day of the survey. The substrate was silt and sand. The USGS hydrologic unit code is 07140203, Shoal Creek/Mississippi River, Upper.

Appendix 1: Wetland Determinations

ROUTINE ON-SITE WETLAND DETERMINATION

Site 1 (page 1 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest/wet meadow
Legal Description: T. 8 N., R. 3 W., Sect. 6, NE/4 SW/4

Location: approximately 115 m south of Smith Rd., immediately east of tributary

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Catalpa speciosa*	tree	FACU
2. *Ulmus americana*	sapling	FACW-
3. *Aster simplex*	herb	FACW

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 67%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Hickory; revised to Birds silt loam (Typic Fluvaquent)
On state hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 10YR 4/6, and 7.5YR 4/4 and 5/6
Redox Depletions? Yes: X No: Color: 10YR 6/1
Matrix color: 2.5Y 4/1 and 10YR 4/1
Other indicators: None.

Hydric soils? *Yes: X No:*

Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent that is poorly drained. Although Birds was not mapped in Montgomery County, it was mapped in neighboring Fayette, Madison, and Shelby Counties. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest/wet meadow
Legal Description: T. 8 N., R. 3 W., Sect. 6, NE/4 SW/4

Location: approximately 115 m south of Smith Rd., immediately east of tributary

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0 – 0.33 m (0 - 13 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands, and creek overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: <2.59 km^2 (1 mi^2)
Other field evidence observed: The site is on the floodplain of a small stream. Wetland drainage patterns were observed.

Wetland hydrology: Yes: X No:
Rationale: Field evidence cited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

ISOLATED STATUS

Is the wetland isolated? Yes: No: X
Rationale: Water exits this wetland via a small tributary.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. The site is not coded as wetland by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
Scott Wiesbrook (soils and hydrology)
Illinois Natural History Survey
Center for Wildlife Ecology
607 East Peabody Drive
Champaign, Illinois 61820
(217) 333-6292

ROUTINE ON-SITE WETLAND DETERMINATION
Site 2 (page 1 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest
Legal Description: T. 8 N., R. 3 W., Sect. 6, NE/4 SW/4

Location: approximately 12 m south of Smith Rd., immediately east of tributary

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Ulmus americana*	tree	FACW-
2. *Polygonum pensylvanicum*	herb	FACW+

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Hickory; revised to Birds silt loam (Typic Fluvaquent)
On state hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 10YR 4/6, and 7.5YR 4/4 and 5/6
Redox Depletions? Yes: X No: Color: 10YR 6/1
Matrix color: 2.5Y 4/1
Other indicators: None.

Hydric soils? Yes: X No:

Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent that is poorly drained. Although Birds was not mapped in Montgomery County, it was mapped in neighboring Fayette, Madison, and Shelby Counties. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 2 (page 2 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest
Legal Description: T. 8 N., R. 3 W., Sect. 6, NE/4 SW/4

Location: approximately 12 m south of Smith Rd., immediately east of tributary

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0 – 0.33 m (0 - 13 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and creek overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: < 2.59 km^2 (1 mi^2)
Other field evidence observed: The site is a low-lying area near a creek.

Wetland hydrology: Yes: X No:
Rationale: Field evidence cited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

ISOLATED STATUS

Is the wetland isolated? Yes: No: X
Rationale: Water exits this wetland via a small tributary.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland.
The site is not coded as wetland by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
Scott Wiesbrook (soils and hydrology)
Illinois Natural History Survey
Center for Wildlife Ecology
607 East Peabody Drive
Champaign, Illinois 61820
(217) 333-6292

ROUTINE ON-SITE WETLAND DETERMINATION
Site 3 (page 1 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: wet meadow
Legal Description: T. 8 N., R. 3 W., Sect. 6, SE/4 NW/4

Location: from approximately 20 m north of Smith Rd. to edge of Lake Hillsboro, immediately west of tributary

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	***Stratum***	***Indicator Status***
1. *Fraxinus pennsylvanica*	shrub	FACW
2. *Cephalanthus occidentalis*	shrub	OBL
3. *Carex normalis*	herb	FACW
4. *Polygonum pensylvanicum*	herb	FACW+
5. *Cinna arundinacea*	herb	FACW

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Hickory; revised to Birds silt loam (Typic Fluvaquent)

On state hydric soils list?	Yes: X	No:	
Is the soil a histosol?	Yes:	No: X	
Histic epipedon present?	Yes:	No: X	
Redox Concentrations?	Yes: X	No:	Color: 10YR 4/6, and 7.5YR 4/4 and 5/6
Redox Depletions?	Yes: X	No:	Color: 10YR 6/1

Matrix color: 2.5Y 4/1 and N 4/
Other indicators: None.

Hydric soils? Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent that is poorly drained. Although Birds was not mapped in Montgomery County, it was mapped in neighboring Fayette, Madison, and Shelby Counties. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 3 (page 2 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: wet meadow
Legal Description: T. 8 N., R. 3 W., Sect. 6, SE/4 NW/4

Location: from approximately 20 m north of Smith Rd. to edge of Lake Hillsboro, immediately west of tributary

HYDROLOGY

Inundated: Yes: X (in places) No: Depth of standing water: 0.1 m (4 in)
Depth to saturated soil: 0 – 0.33 m (0 - 13 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and creek overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: < 2.59 km^2 (1 mi^2)
Other field evidence observed: The site is a low-lying area near a creek. Driftlines and wetland drainage patterns were observed.

Wetland hydrology: Yes: X No:
Rationale: Field evidence cited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

ISOLATED STATUS

Is the wetland isolated? Yes: No: X
Rationale: Water exits this wetland via a small tributary.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland. Part of the site is coded by the NWI as PFO1Ah (palustrine, forested, deciduous, temporarily flooded, diked/impounded). Part is uncoded.

Determined by: Allen Plocher (vegetation and hydrology)
Scott Wiesbrook (soils and hydrology)
Illinois Natural History Survey
Center for Wildlife Ecology
607 East Peabody Drive
Champaign, Illinois 61820
(217) 333-6292

ROUTINE ON-SITE WETLAND DETERMINATION
Site 4 (page 1 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest
Legal Description: T. 8 N., R. 3 W., Sect. 6, SE/4 NW/4

Location: approximately 130 m north of Smith Rd., immediately east of tributary

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soil, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. *Ulmus americana*	tree	FACW-
2. *Toxicodendron radicans*	herb	FAC+
3. *Polygonum pensylvanicum*	herb	FACW+

Percent of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: More than 50% of dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Hickory; revised to Birds silt loam (Typic Fluvaquent)
On state hydric soils list? Yes: X No:
Is the soil a histosol? Yes: No: X
Histic epipedon present? Yes: No: X
Redox Concentrations? Yes: X No: Color: 10YR 4/6, and 7.5YR 4/4 and 5/6
Redox Depletions? Yes: X No: Color: 10YR 6/1
Matrix color: 2.5Y 4/1
Other indicators: None.

Hydric soils? Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent that is poorly drained. Although Birds was not mapped in Montgomery County, it was mapped in neighboring Fayette, Madison, and Shelby Counties. This soil possesses redox concentrations and depletions within a low chroma matrix, which indicates saturated or reduced conditions for extended duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 4 (page 2 of 2)

Field Investigators: Plocher, Wiesbrook **Date:** 31 January 2006
Project Name: Eagle Zinc
State: Illinois **County:** Montgomery **Applicant:** IEPA
Site Name: floodplain forest
Legal Description: T. 8 N., R. 3 W., Sect. 6, SE/4 NW/4

Location: approximately 130 m north of Smith Rd., immediately east of tributary

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.33 m (13 in)
Overview of hydrological flow through the system: Primary hydrologic inputs to this site are precipitation, runoff from the surrounding uplands and creek overflow. Evapotranspiration and sheetflow are the major outputs.
Size of watershed: $< 2.59\ km^2$ ($1\ mi^2$)
Other field evidence observed: The site is a low-lying area near a creek. Wetland drainage patterns were observed.

Wetland hydrology: Yes: X No:
Rationale: Field evidence cited above indicates that the site is flooded or saturated for a sufficient period during the growing season to meet the criterion of wetland hydrology.

ISOLATED STATUS

Is the wetland isolated? Yes: No: X
Rationale: Water exits this wetland via a small tributary.

WETLAND DETERMINATION AND RATIONALE:

Is the site a wetland?: Yes: X No:
Rationale: Hydrophytic vegetation, hydric soils and wetland hydrology are present. Therefore the site is a wetland.
The site is not coded as wetland by the NWI.

Determined by: Allen Plocher (vegetation and hydrology)
Scott Wiesbrook (soils and hydrology)
Illinois Natural History Survey
Center for Wildlife Ecology
607 East Peabody Drive
Champaign, Illinois 61820
(217) 333-6292